



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/630,733	07/31/2003	Junichi Taniguchi	D-1496	9348

7590 12/18/2003
KANESAKA AND TAKEUCHI
1423 Powhatan Street
Alexandria, VA 22314

EXAMINER

WELLS, NIKITA

ART UNIT PAPER NUMBER

2881

DATE MAILED: 12/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/630,733	Applicant(s) TANIGUCHI, JUNICHI	
	Examiner Nikita Wells	Art Unit 2881	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1 and 2 are rejected under 35 U.S.C. 102(e) as being anticipated by Russ et al. (6,417,511 B1).

With respect to above claims, Russ et al. disclose (Figs. 4 and 6A; Abstract; Col. 4, lines 53-67; Col. 5, lines 9-16; and Col. 6, lines 36-67) an ion guide (300) for guiding ions in an analytical device having an intermediate chamber, comprising: a plurality of plate-shape electrodes (308) disposed in the intermediate chamber and juxtaposed in a transport direction of the ions, each of the plate-shape electrodes (308) having an ion passage hole around an ion beam axis (307); a plate-shape aperture electrode (308) disposed as a partition between the intermediate chamber and an adjacent chamber, the aperture electrode having an aperture around beam axis (307); and a high frequency power source (602) for applying a high frequency electric voltage and a DC voltage (608) to the plate-shape electrodes (308) and the aperture electrode so that ions are transported from the intermediate chamber to the adjacent chamber.

Claim Rejections - 35 USC § 103

Art Unit: 2881

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Russ et al. (6,417,511 B1).

With respect to claim 3, Russ et al. disclose (Figs. 4 and 6A; Col. 6, lines 36-67; and Col. 15, lines 1-7) an ion guide which accelerates the ion beam along the beam axis, but fail to specifically disclose that resistors are connected between adjacent plate-shape electrodes (308) for creating an electric field gradient. However, the use of resistors that are connected between adjacent electrodes for creating an electric field gradient, is very well known in prior art. All sorts of voltage divider schemes using resistors connected to electrodes are used in accelerator technology and are well represented in prior art.

With respect to claim 4, Russ et al. fail to disclose that the high frequency power supply includes a pair of power sources connected to the adjacent plate-shaped electrodes for applying high frequency electric voltages having phases shifted by 180 degree with each other. However, it is a matter of obvious design choice to include the use a pair of power sources connected to the adjacent plate-shaped electrodes in order to apply high frequency voltages having 180 degree phase shifts on the electrodes. The application of voltages to the acceleration electrodes with various phasing schemes have been used in prior art.

With respect to claim 5, Russ et al. fails to disclose that the plate-shaped electrodes have the ion passage holes with a diameter larger than that of the aperture electrode. However, it is a

Art Unit: 2881

matter of obvious design choice to set the hole diameters of the plate-shaped electrodes to a value which would be optimum in order to allow maximum transmission of the ion beam through the ion guide.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Whitehouse et al. (6,403,953 B2) disclose a multipole ion guide that accepts ions from an atmospheric pressure ion source, accelerates the ions, passing them through a differential pumping section, and then transporting the ions into a mass analyzer.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nikita Wells whose telephone number is (703) 305-0416. The examiner can normally be reached 8:30 AM - 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R. Lee can be reached on (703) 308-4116. The central fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



Nikita Wells

Primary Examiner, Art Unit 2881

December 9, 2003